

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
28 April 2005 (28.04.2005)

PCT

(10) International Publication Number
WO 2005/037742 A1

(51) International Patent Classification⁷: C07C 19/08,
17/21, 17/04, 17/23

(21) International Application Number:
PCT/US2004/034447

(22) International Filing Date: 13 October 2004 (13.10.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/511,355 14 October 2003 (14.10.2003) US

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(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: PROCESS FOR THE PREPARATION OF 1,1,1,3,3,3-HEXAFLUOROPROPANE AND AT LEAST ONE OF
1,1,1,2,3,3-HEXAFLUOROPROPANE AND 1,1,1,2,3,3,3-HEPTAFLUOROPROPANE

(57) Abstract: A process is disclosed for the manufacture of 1,1,1,3,3,3-hexafluoropropane (HFC-236fa) and at least one 1,1,1,2,3,3-
hexafluoropropane (HFC-236ea) and 1,1,1,2,3,3,3-heptafluoropropane (HFC-227ea). The process involves (a) reacting HF, Cl₂, and
at least one halopropene of the formula CX₃CCl=CX₂ (where each X is independently F or Cl) to produce a product including
both CF₃CCl₂CF₃ and CF₃CClFCClF₂; (b) reacting CF₃CCl₂CF₃ and CF₃CClFCClF₂ produced in (a) with hydrogen to produce a
product comprising CF₃CH₂CF₃ and at least one compound selected from the group consisting of CHF₂CHF₂CF₃, and CF₃CHF₂CF₃;
and (c) recovering from the product produced in (b), CF₃CH₂CF₃ and at least one compound selected from the group consisting
of CHF₂CHF₂CF₃ and CF₃CHF₂CF₃. In (a), the CF₃CCl₂CF₃ and CF₃CClFCClF₂ are produced in the presence of a chlorofluorina-
tion catalyst including a ZnCr₂O₄/crystalline α-chromium oxide composition, a ZnCr₂O₄/crystalline α-chromium oxide composition
which has been treated with a fluorinating agent, a zinc halide/α-chromium oxide composition and/or a zinc halide/α-chromium
oxide composition which has been treated with a fluorinating agent.